Antral follicle count affects fertility in Nelore Heifers

I. S. Souza[1], J.M. Gheller[1], W.V.A. Reis[1], D. Braga[1], W.A.L. Silva[1], G. T. Souza Netto[2], F.A. Melo-Sterza[3], G.G. Macedo[1]

[1]Faculty of Veterinary Medicine and Animal Science, Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.
[2]Água Tirada Group, Maracaju, MS, Brazil
[3]University of Mato Grosso do Sul state, Aquidauana, MS, Brazil

INTRODUCTION

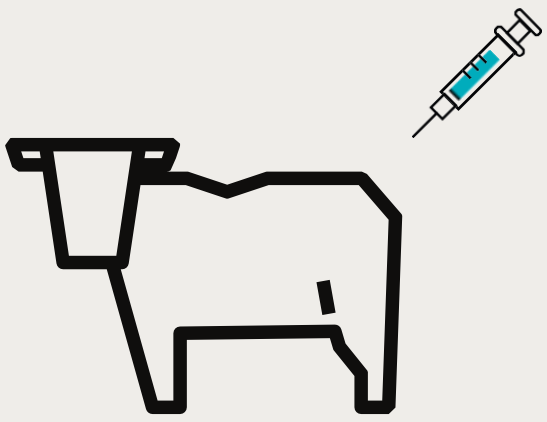
Antral follicle count (AFC) has gained merit as a predictor of fertility, with important correlations for quality and quantity of embryos, ovarian follicular reserve, as well as ovulatory follicle size and conception rates. Besides that, resents high repeatability and it is easily measured. However, there have been differences between Bos taurus and Bos indicus regarding pregnancy rates and reproductive quality.

AIM OF THE STUDY

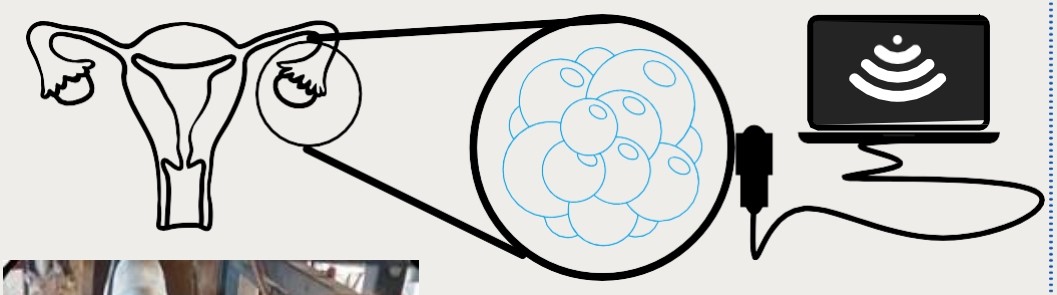
In the present study we aimed to identify the traits that most correlated with AFC in Bos indicus Nellore females.

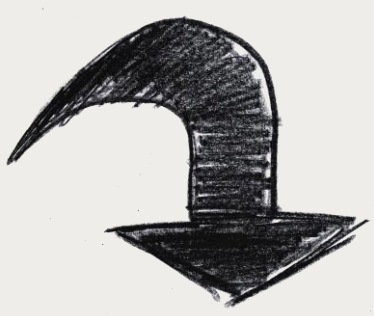
MATERIALS & METHODS

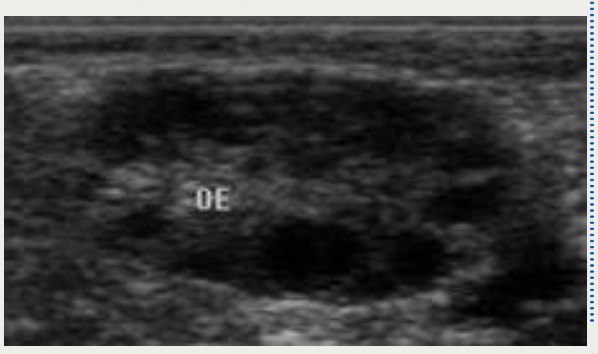
A total of 223 heifers with 24 - 30 months, 379±33kg of weight were induced to puberty following with synchronization of ovulation protocol and time artificial insemination (TAI).



At the beginning of the TAI protocol (D0), the ovarian follicles with diameter ≥ 3 mm were counted by ultrasound. In addition, were measured dominant follicle diameter (DFD), ovary diameter (OD), conception rate at 30 days (CR30), final conception rate (FCR) and pregnancy loss (PL).

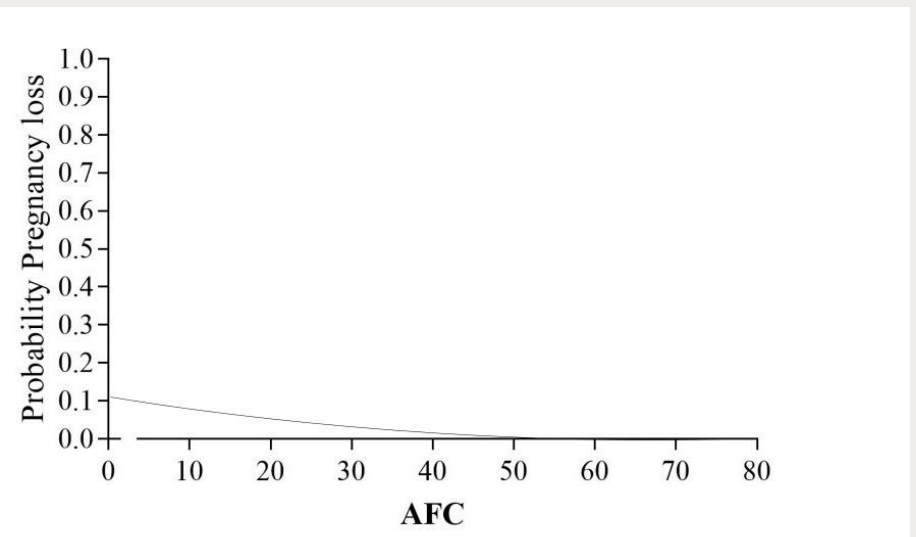


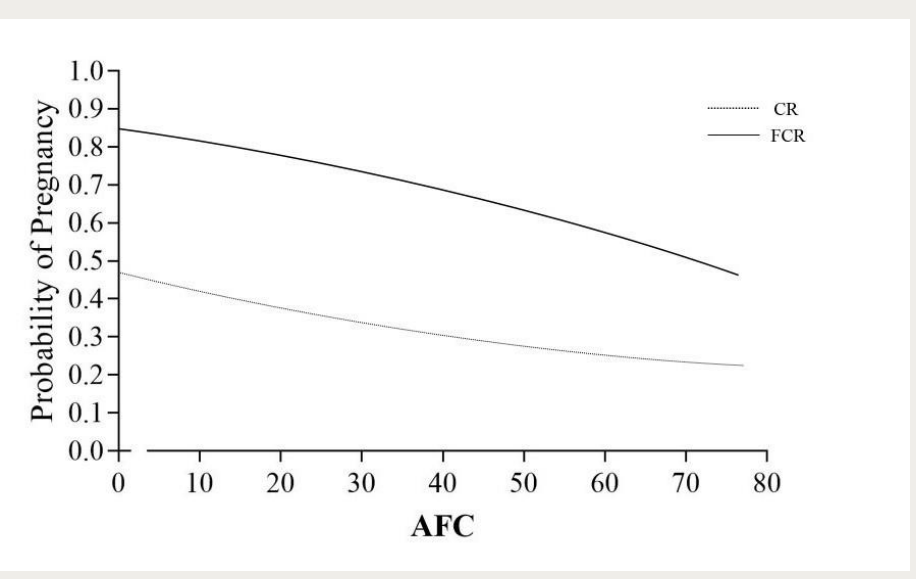




The AFC was determinate by an ovarian ultrasound exam with SonoScape Vet A5, which was used by an operator, who needed to rotated the probe 180º in ovarian region and accounted all visible follicles on a unique ovarian. Data for the present experiment were analyzed by SAS University.

RESULTS





The AFC average was 26,2 ± 10,7 follicles, conception rate (CR) was 37,67%, final conception rate (FCR) 79,2%, and pregnancy loss (PL) 3,6%. Pearson's correlation coefficients were evaluated for all variables in relation to the AFC. Correlations were not significant for AFC with BCS, DFD and OD ($p>0.05$). A logistic procedure was also made for AFC and pregnancy rate at 30 and 60 days, and pregnancy loss. No significant correlations ($p>0.05$) were found for AFC and CR, AFC and FCR, AFC and PL. However, a tendency ($p=0,07$) was observed for FCR and AFC, greater pregnancy rate is present in Nelore heifers with lower AFC. There was no effect of AFC in pregnancy loss ($p>0.05$).

CONCLUSION

In brief, female fertility can be predicated by AFC, were those with lower AFC can be selected to improve the reproductive performance of the herd.